

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) An information recording medium comprising:

a first recording layer in which a first recoding track path for recording record information, is formed;

a second recording layer which is disposed on said first recording layer and in which a second recoding track path for recording the record information, is formed in an opposite direction to the first recording track path; and further,

a first buffer area (i) for preventing a recording or reproduction position from deviating from said first recording layer or said second recording layer, and (ii) for layer jump, on an outer circumferential edge portions of said first recording layer and said second recording layer,

~~at least one~~ portion of said first buffer area being formed, on the first recording track path and the second recording track path, in advance as a pre-recording area, of embossed pits or pits obtained by irradiation of recording laser, and

said information recording medium further comprising a management area to record therein identification information which is start/end address information indicating whether or not at least one portion of said first buffer area is formed in advance as a start or end position of the pre-recording area,

~~wherein the identification information is start/end address information indicating a start or end position of at least one portion of said first buffer area formed in advance.~~

2. (previously presented) The information recording medium according to claim 1, wherein said management area is a recording management area for managing the recording of the record information.

3. (original) The information recording medium according to claim 1, wherein

pre-format address information is recorded in said first recording layer and said second recording layer, and

identification information indicating that said first buffer area is formed in advance, is added to the pre-format address information.

4. (cancelled)

5. (currently amended) The information recording medium according to claim ~~4~~ 1, wherein the start/end address information indicates that said first buffer area is not formed in advance, when having a predetermined value.

6. (currently amended) The information recording medium according to claim 1, wherein (i) ~~at least one~~ portion of said first buffer area is formed in advance of embossed pits, and (ii) a recording film capable of performing additional recording is laminated thereon.

7. (currently amended) An information recording apparatus ~~(i-a) for recording a first portion of the record information along the first recording track path, and (ii-a) for recording a second portion of the record information, with a recording direction turned around, along the second recording track path,~~ with respect to an information recording medium constructed such that a first recording layer has a first recording capacity and a second recording layer has a second recording capacity,

said information recording medium comprising:

the first recording layer in which a first recoding track path for recording record information, is formed;

the second recording layer which is disposed on said first recording layer and in which a second recoding track path for recording the record information, is formed in an opposite direction to the first recording track path; and further,

a first buffer area (i) for preventing a recording or reproduction position from deviating from said first recording layer or said second recording layer, and (ii) for layer jump, on an outer circumferential edge portions of said first recording layer and said second recording layer,

~~at least one~~ portion of said first buffer area being formed, on the first recording track path and the second recording track path, in advance as a pre-recording area, of embossed pits or pits obtained by irradiation of recording laser, and

said information recording medium further comprising a management area to record therein identification information which is start/end address information ~~indicating whether or not~~ ~~at least one portion of said first buffer area is formed in advance as a start or end position of the pre-recording area,~~

~~wherein the identification information is start/end address information indicating a start or end position of at least one portion of said first buffer area formed in advance,~~

said information recording apparatus comprising:

an obtaining device for obtaining the identification information which is recorded in the management area;

a judging device for judging whether or not one portion of the first buffer area is formed in advance as the pre-recording area;

a first recording device for recording the record information into an unrecorded portion other than the pre-recording area in the first buffer area on the basis of the start/end address information, which is the identification information, indicating the start or end position of the pre-recording area, if it is judged by said judging device that one portion of the first buffer area is formed in advance as the pre-recording area; and

a second recording device for recording the record information into whole of the first buffer area, if it is judged by said judging device that one portion of the first buffer area is not formed in advance as the pre-recording area

~~a writing device capable of respectively writing the first portion and the second portion into said first recording layer and said second recording layer;~~

~~a calculating device for calculating a turn-around address on the first recording track path, in turning around from the first recording track path to the second recording track path, in a case (iii) where the first portion with an information amount which does not satisfy the first recording capacity, out of the record information, is written along the first recording track path, and (iv) where the second portion with an information amount which does not satisfy the second recording capacity is written along the second recording track path, on the basis of (v 1) a total information amount of the record information, (v 2) the start/end address information, (v 3) the first recording capacity, and (v 4) the second recording capacity; and~~

~~a controlling device for controlling said writing device, (i) to write the first portion along the first recording track path up to the calculated turn around address, (ii) to add buffer data so as to form another portion of said first buffer area in said first recording layer and said second recording layer, and (iii) to write the second portion along the second recording track path from a correspondence address in said second recording layer corresponding to the calculated turn around address in said first recording layer.~~

8-11. (cancelled)

12. (currently amended) An information recording method ~~in an information recording apparatus comprising a writing device (i a) for recording a first portion of the record information along the first recording track path, and (ii a) for recording a second portion of the record information, with a recording direction turned around, along the second recording track path,~~ with respect to an information recording medium constructed such that a first recording layer has a first recording capacity and a second recording layer has a second recording capacity,

said information recording medium comprising:

the first recording layer in which a first recoding track path for recording record information, is formed;

the second recording layer which is disposed on said first recording layer and in which a second recoding track path for recording the record information, is formed in an opposite direction to the first recording track path; and further,

a first buffer area (i) for preventing a recording or reproduction position from deviating from said first recording layer or said second recording layer, and (ii) for layer jump, on an outer circumferential edge portions of said first recording layer and said second recording layer,

~~at least one~~ portion of said first buffer area being formed, on the first recording track path and the second recording track path, in advance as a pre-recording area, of embossed pits or pits obtained by irradiation of recording laser, and

said information recording medium further comprising a management area to record therein identification information which is start/end address information indicating ~~whether or not at least one portion of said first buffer area is formed in advance as a start or end position of~~ the pre-recording area,

~~wherein the identification information is start/end address information indicating a start or end position of at least one portion of said first buffer area formed in advance,~~

said information recording method comprising:

an obtaining process of obtaining the identification information which is recorded in the management area;

a judging process of judging whether or not one portion of the first buffer area is formed in advance as the pre-recording area;



a first recording process of recording the record information into an unrecorded portion other than the pre-recording area in the first buffer area on the basis of the start/end address information, which is in the identification information, indicating the start or end position of the pre-recording area, if it is judged by said judging process that one portion of the first buffer area is formed in advance as the pre-recording area; and

a second recording process of recording the record information into whole of the first buffer area, if it is judged by said judging process that one portion of the first buffer area is not formed in advance as the pre-recording area

~~a calculating process of calculating a turn-around address on the first recording track path, in turning around from the first recording track path to the second recording track path, in a case (iii) where the first portion with an information amount which does not satisfy the first recording capacity, out of the record information, is written along the first recording track path, and (iv) where the second portion with an information amount which does not satisfy the second recording capacity is written along the second recording track path, on the basis of (v-1) a total information amount of the record information, (v-2) the start/end address information, (v-3) the first recording capacity, and (v-4) the second recording capacity; and~~

~~a controlling process of controlling said writing device, (i) to write the first portion along the first recording track path up to the calculated turn around address, (ii) to add buffer data so as to form another portion of said first buffer area in said first recording layer and said second recording layer, and (iii) to write the second portion along the second recording track path from a correspondence address in said second recording layer corresponding to the calculated turn around address in said first recording layer.~~

13. (cancelled)